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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,532	10/02/2001	Jiro Yamada	09794353-001	4317

7590 07/14/2004  
David R Metzger  
Sonnenschein Nath & Rosenthal  
Wacker Drive Station  
PO Box 061080  
Chicago, IL 60606-1080

EXAMINER
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HODGES, MATTHEW P

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/889,532

Applicant(s)

YAMADA ET AL.

Examiner

Matt P Hodges

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

The Amendment, filed on 4/09/2004, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-37 has been entered.

### ***Drawings***

The drawings were received on 4/9/2004. These drawings are accepted.

### ***Claim Objections***

Claims 38-48 objected to because of the following informalities:

Claims 38-41 include the typographical error "one of second electrodes" which should not be plural.

Claims 42-48 depend upon claims 38-41.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 47 and 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 48 and 49, applicant does not appear to disclose in either the specification or the drawings the use of the first electrode inside of the cavity portion. The first electrode is disclosed as a reflective electrode that serves to form a boundary of the cavity at the border of the first electrode and the light emitting layer, however light does not appear to penetrate the first electrode thus preventing it from being a factor in the optical path length of the resonant cavity.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 49 and 50 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

Regarding claim 49, applicant does not provide enough information to define the value L and the remainder of the recitation following “optical path length L of” does not form a complete sentence. It is unclear to the examiner what is the desired relationship the applicant is attempting to claim.

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Claim 50 is rejected as it depends upon claim 49.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 38 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Isaka et al. (US 5,936,347).

Regarding claims 38 and 48, Isaka discloses (see figure 1) a display device including a light-emitting layer (12), between a first electrode (10) of reflective material, and a second electrode (6) of transparent material. The resonant cavity is formed between the first electrode and the semi-reflective mirror (5) and has an optical length equal to the width of the light-emitting layer. (Column 6 lines 37-65). Further the width of the light emitting layer is set according to the equation on Column 5 line 44, which establishes the width to be the positive minimum value for each desired color emission.

Claims 38, 41, 42, 45, 46, 49, and 50 are rejected under 35 U.S.C. 102(e) as being anticipated by Xu et al. (US 6,133,692).

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Regarding claims, Xu discloses (see figure 1) a display device including a light-emitting layer (16), between a first electrode (15) of reflective material, and a second electrode (18) of transparent material. Xu further discloses the use of color filters (13) outside the cavities for transmitting the resonated light. (Column 3 lines 33-44). The resonant cavity is formed between the first electrode and the semi-reflective mirror (21) and has an optical length equal to the widths of both the light emitting layer and the second electrode. (Column 2 lines 36-57). The cavity is multi-mode having peaks in the red, green and blue wavelengths. The optical length of the cavity is set to integer values of  $m$  greater than zero as it is multimode.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

<sup>39, 40, 43 & 44</sup>  
Claims are rejected under 35 U.S.C. 103(a) as being unpatentable by Xu et al. (US

6,133,692).

Regarding claims 39 and 43, Xu discloses (see figure 1) a display device as claimed (see rejections of claims 39 and 41 above) but does not appear to specifically state that the optical cavity length is increased until 4 more resonances for green light are included, however the cavity as disclosed by Xu is multimode and does include peaks in all three wavelengths. Further the applicant fails to identify the use of increasing the optical cavity length until exactly 4 more

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resonances for green light are included to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. It would have been an obvious design choice to one having ordinary skill in the art to increase the optical cavity length until 4 more resonances for green light are included to the display device as disclosed by Xu, since such a modification would involve a mere optimization of the optical cavity width.

Regarding claims 40 and 44, Xu discloses (see figure 1) a display device as described in the rejection of claims 39 and 41 above, but does not appear to specifically state that the optical cavity length is increased until 14 or more resonances for green light are included, however the cavity as disclosed by Xu is multimode and does include peaks in all three wavelengths. Further the applicant fails to identify the use of increasing the optical cavity length until 14 or more resonances for green light are included to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. It would have been an obvious design choice to one having ordinary skill in the art to increase the optical cavity length until 14 or more resonances for green light are included to the display device as disclosed by Xu, since such a modification would involve a mere optimization of the optical cavity width.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Response to Arguments***

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

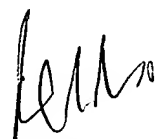
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mph 

  
NIMESHKUMAR D. PATEL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800